When a feature programming request is made for the pushbutton connected to switch **301***a*, microprocessor **101** applies a steady logic level 1 first sensible control signal to LED **201***a* (first sensible indicating means) and a short duration, e.g. 300 milliseconds, logic level 1 second sensible control signal to transducer **203** (second sensible indicating means). LED **201***a* then provides a steady light or first visual signal and transducer **203** provides a single beep tone or first audible signal. These signals acknowledge prolonged operation of the pushbutton connected to switch **301***a*. When this pushbutton is subsequently released, microprocessor **101** detects the resultant logic level 1 signal on lead **303***a* and applies a periodic or pulsing logic level 1 third sensible control signal to LED **201**, causing it to flash at a rate of 120 interruptions per minute. This second visual signal acts as a prompting signal for more information. Microprocessor **101** then enters the programming mode and the keypad is placed in the dual stroke mode.

Selected keypad buttons are then successively depressed to provide signals representative of the selected feature code. Two keypad buttons are depressed successively to represent each entry. For example, to record a number **5**, the keypad button with the number "5" is depressed twice. Similarly, to record a letter "F", the keypad buttons "3" and "#" are successively depressed.

The algorithm for the data patterns to be used for data entry under this dual stroke mode is represented in the FIG. **1**, Data entry and Display Control table. As shown in the table, numbers are entered by two depressions of the keypad button with the selected number on it. However, letters are entered by depression of the keypad button with the selected letter, followed by depression of (a) the keypad button "*" if the selected letter is the left letter on the previously depressed keyboard button; or (b) the keypad button "0" if the selected letter is the middle letter on the previously depressed keypad button; or (c) the keypad button "#" if the selected letter is the right letter on the previously depressed keypad button. The telephone control functions pause and flash are entered by two depressions of the "*" and "#" buttons, respectively.

The display control functions are similarly implemented as follows: (a) the cursor is moved to the left by successive depressions of the "*" and "0" buttons; (b) the cursor is moved to the right by successive depressions of the "#" and "0" buttons; (c) the command for insertion of one dual stroke character is represented by successive depressions of the "0" and "*" buttons; (d) the command for deletion of one character is represented by successive depressions of the "0" and "#"; (e) the cursor is moved to the next field (tab) by successive depressions of the "*" and "#" buttons; and (f) the cursor is moved to the next entry (line drop) by successive depressions of the "#" and "*" buttons.

Microprocessor **101** detects and accumulates the resultant logic level 0 signals on the row and column leads for each depression of a keypad pushbutton. Microprocessor **101** continues to accumulate these row and column signals until the pushbutton connected to lead 301*a* is depressed and held depressed for a prolonged predetermined time, e.g. 1.5 seconds. This prolonged appearance of a logic level 0 switch signal informs microprocessor **101** that all of the keypad signals for programming the selected feature have been provided. Microprocessor **101** then determines a data code associated with the accumulated row and column signals and stores this data code in memory **102** at a location reserved for the selected pushbutton. Since these data codes are preassigned to the available features, the code identifying the selected feature is now stored in a memory location associated with the pushbutton connected to switch **301***a*.

Microprocessor **101** then applies a steady logic level 0 fourth sensible control signal LED **201***a* and a short duration logic level 1 fifth sensible control signal to transducer **203**. Transducer **203** then provides a single beep second audible tone and LED **201***a* is extinguished (third visual signal). These signals indicate completion of th programming of the selected feature to the button connected to switch **301***a*. Operation of the selected feature can then be executed by momentary depression of the pushbutton connected to switch **301***a*.

Thus the data entry and display control circuit of the present invention uses a microprocessor and an associated memory to receive and translate pushbutton and keypad button codes representative of telephone features, program codes and data, and cursor control functions.

It will be obvious to those skilled in the art that numerous modifications of the present invention can be made without departing from the spirit of the invention which shall be limited only by the scope of the claims appended hereto.

What is claimed is:

1. A data entry and display control circuit for use in a telephone including a plurality of switches each being operative to successively provide a plurality of appearances of a switch signal, and a keypad being operative to provide a plurality of character signals, said telephone being operative to provide a plurality of features, each in response to operation of a different switch, said data entry and display control circuit comprising:

storage means having a plurality of storage locations and being operative to store a plurality of feature codes, each being associated with one of said plurality of features;

a microprocessor connected between said switches and said storage means, and operative in response to the occurrence, in succession for each switch, of a first appearance of predetermined duration of said switch signal, at least one pair of character signals having a predetermined relationship to one of said feature codes, and a second appearance of predetermined duration of said switch signal, to store in said storage means a date code associating said switch with said one of said feature codes, whereby each switch is programmed to operate an associated feature; and

a display screen, connected to said microprocessor, and including a positionable cursor;

said microprocessor being further operative in response to predetermined pairs of character signals to vary the position of said cursor, and being further operative in response to other predetermined pairs of character signals to delete or insert data, as defined by a subsequent pair of characters, at the location indicated by the cursor.

2. A data entry and display control circuit a claimed in claim **1**, wherein said microprocessor is operative in response to a predetermined pair of character signals to move the cursor to the left.

3. A data entry and display control circuit as claimed in claim **1**, wherein said microprocessor is operative in response to a predetermined pair of character signals to move the cursor to the right.